

Pulmonary Hypertension. Nicholas S Hill and Harrison W Farber, editors. *Contemporary Cardiology* series. Christopher P Cannon, series editor. Annemarie Armani, executive editor. Totowa, New Jersey: Humana Press/Springer. 2008. Hard cover, 448 pages, illustrated, \$149.

While the field of pulmonary hypertension has been expanding at a dizzying speed, with an ever-expanding number of papers, there has not been a single reference book where the expert or the novice in the field can go to get an in-depth discussion of the disease, from its history to pathobiology to the state of the art in evaluation and management. **Pulmonary Hypertension**, by Hill and Farber, does just that. While several evaluation and management guidelines have been published by professional societies, very few books have been dedicated to this topic that can serve as a reference book as well as a guide for health-care practitioners. Thus, this book fills a great need in this rapidly progressing discipline. It is a comprehensive yet succinct text that can be used not only by the pulmonary hypertension experts, but also by other health-care professionals who want to learn more about the disease.

At a little over 400 pages, this book is organized into 19 chapters that cover all aspects of pulmonary hypertension, including history, classification, evaluation, medical and surgical management, and future directions. While the reader without prior knowledge of pulmonary hypertension will get the most out of some chapters of this book, such as those addressing the disease classification and the general approach to evaluation and management, the pulmonary hypertension expert can also enjoy several in-depth discussions, such as the one on right-ventricular function.

Over 30 authors contributed to this book, and most of the authors or co-authors are experts in their fields. The book starts with a historical overview by Fishman, an expert who has experienced many of the discoveries first-hand. Fishman's opening chapter, along with the following 5 chapters, by Hargett and Tapson (classification), Oudiz (diagnosis), Farber (pathobiology), and Willers and Robbins (genetics), set the stage for

the rest of the book. The only missing part here is a clear introduction to the different terms and abbreviations commonly used in the field, and often confusing some newcomers and pulmonary hypertension experts alike. This would have been a wise investment of space. The final chapter in this group, by Stone and Klinger, on the right ventricle, is a treatise on the topic and worthy of a detailed read.

This is followed by a series of chapters addressing specific disease entities and their association with pulmonary hypertension. Chapter 7, on congenital heart disease, by Lanzberg, is a must-read for anybody in the pulmonary hypertension field, as it demystifies this often very confusing area. Chapters on connective-tissue disease (by Fisher, Hill, and Farber), human immunodeficiency virus, liver disease, sarcoidosis, and sickle-cell disease (by Fisher and Klings), and chronic thromboembolic pulmonary hypertension (by Test, Auger, and Fedullo) are all excellent overviews of pulmonary hypertension associated with those conditions, although the thromboembolic chapter is a bit long. Notably missing, however, is a discussion of pulmonary hypertension in the setting of lung disease, including interstitial lung disease and emphysema. This is a very important emerging area of interest that would have been worthy of its own chapter.

The management chapters start with a general approach in Chapter 11 (by Hill and Klings), followed by chapters dedicated to each class of medication. The prostacyclin chapter by Hill, Vardas, and McLaughlin is a good overview, and so is the phosphodiesterase inhibitors chapter by Preston. They both give a good mix of theoretical and practical information, while the endothelin-blockade chapter by Langleben is heavier on the theoretical than the practical aspects of this therapy. Chapter 15 is a separate multi-authored chapter on statin therapy for pulmonary hypertension. It is not clear why a chapter needed to be devoted to this topic, but it is well written and detailed for those interested in this emerging area. Chapter 16 (by Hirschrift, Steiner, and Hill) does a good job in covering transitions and combination therapy, and Chapter 18, by Trulock, covers surgical therapies, including lung transplantation and atrial septostomy. Chapter 17, on

acute right-ventricular dysfunction (by Vieillard-Baron and Jardin), may seem a bit out of place, but is well written and complements Chapter 6, on right-ventricular function, with some but minimal overlap. The closing chapter, on new directions in pulmonary hypertension therapy (by Carlin and Peacock), gives the reader an excellent overview of this very exciting area.

A first rate selection of figures are provided in one area as color plates, but their resolution could have been better. Overall, I found this textbook to be very useful, well written, and accurate. The only major limitation I see is the absence of a chapter dedicated to pulmonary hypertension in the setting of lung disease. All other issues are relatively minor and do not take away from this excellent and timely textbook that covers the important emerging field of pulmonary hypertension.

I highly recommend **Pulmonary Hypertension** to all health-care professionals involved in the care of patients with this disease. It is an easy and informative read, but it is also well organized for use as a reference. I will keep my copy within a close reach from my desk.

Raed A Dweik MD
Pulmonary Vascular Program
Respiratory Institute
Cleveland Clinic
Cleveland, Ohio

The author has disclosed no conflicts of interest.

Pediatric Respiratory Medicine, 2nd edition. Lynn F Taussig MD, Louis I Landau MD editors. Philadelphia: Mosby Elsevier. 2008, Hard cover, illustrated, 1,152 pages, \$149.

Move over, Kendig—weighing in at 6 lbs 10 oz is the second edition of Taussig and Landau's **Pediatric Respiratory Medicine**. The team of authors is a distinguished international panel of experts in pediatric pulmonary diseases. The text is detailed, up to date, and comprehensive. The writing style is consistent. The focus is on understanding the disease process, rather than serving as a cookbook type guide to therapy.

The opening chapter, on origins and economic impact of respiratory disease, is a nicely written overview of where we are in

pediatric pulmonology. The brief discussion of the substantial economic impact of preventable childhood lung disease highlights the need for public policy action.

The chapters on developmental anatomy, physiology, lung cell biology, and host defenses pack a comprehensive and well referenced review into a relatively short space. These chapters are good for the expert looking for a comprehensive review; these chapters are not written for the beginning student.

The chapters on applied physiology and clinical assessment contain insights that will be useful for both the novice and the expert. The chapter on imaging stresses the importance of minimizing radiation dose and exposure for children. The chapter on procedures (by Wood) displays the knowledge, experience, and wisdom of one of the pioneers of pediatric fiberoptic bronchoscopy; it should be required reading for any student of the procedure.

Discussion of home mechanically assisted ventilation is challenging; there is relatively little evidence on which to base opinions. What is presented appears to reflect one center's practice. Areas of controversy are not highlighted. The author's advice that "ventilation via tracheostomy should be considered if ventilation is required for more than 16 hours per day" conflicts with the experience of others who have had success with prolonged noninvasive ventilation.^{1,2}

The chapter on aspiration syndromes astutely points out the importance of aspiration with dysfunctional swallow in recurrent pneumonia, and highlights the association between supine bottle-feeding in early life and the later development of wheezing illness. The drug-induced lung disease chapter helpfully categorizes toxicities by effects on airways, alveoli, interstitium, vasculature, and pleura.

The section on neonatal respiratory disorders includes an excellent and comprehensive discussion of what is known of the pathophysiology, and includes mention of where current knowledge is limited. The evidence for and against different management strategies is discussed. Where evidence is strong (such as for "back to sleep" in prevention of sudden infant death syndrome), strong recommendations are made. Unfortunately, many management decisions need to be made based on imperfect evidence.

There is extensive discussion on respiratory infections (200 pages), starting with upper-respiratory infections, viral, bacterial,

and fungal lower-respiratory infections, and infections in the immunocompromised host. The history, epidemiology, risk factors, clinical syndromes, and approaches to therapy are described for the different infectious processes.

The section on immunologic lung diseases includes a succinct and practical summary of childhood interstitial lung disease by several of the leaders in the field. Chapters on collagen vascular disorders, pulmonary alveolar proteinosis, pulmonary hemosiderosis, sarcoidosis, and immunodeficiencies provide focused summaries that bridge the knowledge about mechanism, presentation, diagnosis, and treatment. As important as what is known, these chapters also highlight the uncertainties in our current knowledge, including treatment regimens that are based on limited clinical experience. Sixty-two pages are devoted to pulmonary hypertension. The discussion of this rapidly evolving field is as up to date as possible.

In the section on asthma, the social cost, what is (and is not) currently known about gene-environment interactions, pathophysiology, and treatment are well described. The section on cystic fibrosis is comprehensive, detailing what is known about its epidemiology, genetics, pathophysiology, and treatment. The multisystem manifestations of the disease are summarized. The treatment of congenital anomalies of the lung is comprehensive, with pathophysiology, treatment approaches, perils, and pitfalls well described.

The section on sleep-disordered breathing, although comprehensive, is not well organized. Discussion of common problems such as obstructive sleep apnea from adenotonsillar hypertrophy are mixed in the discussion with rare disorders such as central apnea from congenital central hypoventilation syndrome.

The section on structural and mechanical abnormalities includes brief but comprehensive reviews on ciliary dyskinesia, pleural-space abnormalities (pneumothorax, exudates, transudate, chylothorax), and bronchiectasis. In "miscellaneous disorders" is lumped atelectasis, alpha-1 antitrypsin deficiency, thoracic tumors, bronchiolitis obliterans, functional disorders such as vocal cord dysfunction and habit cough, and a brief review of pulmonary manifestations of systemic disorders.

The role of active and second-hand tobacco smoke in causing and exacerbating lung disease in children is clearly described through multiple sections, yet there is no

discussion of tobacco dependence or its treatment. Tobacco dependence starts in childhood and adolescence. Effective, evidence-based approaches to prevention and treatment of tobacco dependence are available.³

Treatment of chronic pulmonary illness is commonly hampered by non-adherence. The therapeutic principles section fails to have any mention of patient education or facilitating treatment adherence; the discussion of patient education is limited to 2 pages out of 61 in the section on asthma.

Each chapter includes a set of suggested readings; the detailed references are available *only* as part of the password protected online access; they are *not* provided in the printed text. This is a major deficiency. Not including references in the text makes it less convenient to check references while reading. It makes it more difficult for students who might borrow the text from a mentor or a library to access the references. Furthermore, it makes archival storage of the references dependent on the publisher's commitment to the Web site. The online access provided is limited to copies of illustrations and chapter references with PubMed links for many but not all of the references. This is useful for preparing talks and writing papers; however, this is not an "online" textbook.

Overall, the book is well written, well referenced, and with a consistent style that focuses on understanding the disease process. The contributors are among some of the leading experts in their fields. This book is an important reference for advanced students of pediatric pulmonology. This reviewer hopes that future editions include the references in the printed text and include sections that focus on patient education and on tobacco dependence prevention and treatment.

Harold J Farber MD MSPH

Pediatric Pulmonary Section
Baylor College of Medicine
and
Texas Children's Hospital
Houston, Texas

The author has disclosed no conflicts of interest.

REFERENCES

1. Bach JR, Bianchi C, Finder J, Fragasso T, Goncalves MR, Ishikawa Y, et al. Tracheostomy tubes are not needed for Duchenne muscular dystrophy. *Eur Respir J* 2007; 30(1):179-180.

2. Soudon P, Steens M, Toussaint M. A comparison of invasive versus noninvasive full-time mechanical ventilation in Duchenne muscular dystrophy. *Chron Respir Dis* 2008;5(2):87-93.
3. Fiore MC, Jaén CR, Baker TB, Bailey WC, Benowitz NL, Curry SJ, et al. Treating tobacco use and dependence: 2008 update: clinical practice guideline. Rockville, MD: US Department of Health and Human Services. Public Health Service. May 2008.

Diagnostic Pulmonary Pathology, 2nd edition. Philip T Cagle, Timothy C Allen, and Mary Beth Beasley, editors. *Lung Biology in Health and Disease* series. Claude Lenfant, series editor. Volume 226. New York: Informa Healthcare. 2008. Hard cover, 791 pages, illustrated, \$249.95.

This volume is part of the well known series *Lung Biology in Health and Disease*, edited by Lenfant. In this book, in its second edition, most chapters were written by authors who are not the editors; therefore, the style and format of each chapter varies. Some chapters are more readable than others, but most chapters are up to date; they include the most recent classifications and cover the most important aspects of each topic. In contrast to most pathology textbooks, this volume is organized on how the patient should be approached, and covers the most common and some uncommon neoplastic and non-neoplastic pulmonary diseases. Although the senior editors of the book are pathologists, the contributing authors include surgeons, clinicians, and radiologists, and this is reflected in the multidisciplinary approach provided to the reader.

The first chapter discusses transbronchial biopsies and is written by a clinician who gives a concise but excellent discussion on risks and benefits of the procedure, issues related to the immunocompromised patient, the likelihood of successful sampling and positive diagnosis, and briefly mentions novel techniques, including endobronchial ultrasound and electromagnetic navigation diagnostic bronchoscopy. The second chapter is written by pathologists (including the senior editor) and is a good review of pathology findings in endobronchial and transbronchial biopsies. A table discussing histologic artifacts will be very useful to the practicing pathologist.

There is only one chapter on pediatric lung disease. It gives a good overview of the pathology of pediatric diseases, including rare and recently described entities, but

it does not go into details of genetics and metabolic diseases.

Topics related to interstitial fibrosis have been divided into 2 chapters: "Predominantly Mature Interstitial Fibrosis" and "Predominantly Immature Interstitial Fibrosis." This is an unorthodox way to discuss and classify these groups of diseases, but it works and is probably going to be useful to the student of these subjects.

The clinical chapters are clear, interesting, and useful, and many include tables and algorithms. The chapter on clinical and radiologic diagnosis of interstitial infiltrates is outstanding and provides a comprehensive review of interstitial lung diseases.

Although there are several excellent pulmonary pathology books, this volume provides an interesting organization that will be useful to the practicing pathologist, such as a chapter on diagnostic approach to the patient with necrosis on lung biopsy. In the chapters on neoplastic diseases the authors did an outstanding job of explaining the specialized radiological features of these tumors and correlating them so well with gross surgically excised specimens. The section on pleural pathology discusses issues that are controversial and difficult to the practicing surgical pathologist, and provide good guidelines for the diagnosis of these lesions, which sometimes is extremely difficult.

The material is well organized and the editors did a great job in terms of selection of topics and authors. Throughout the text, the photographs are good, but, unfortunately, as is the rule in this series, all the illustrations are black-and-white, including the photomicrographs, which are small. Radiologists and pathologists who are interested in detailed, high-resolution, color illustrations should refer to atlases and textbooks on the subject (in fact, some of them edited by the same editors of this volume).

This book provides a thorough review of pulmonary diseases that covers clinical aspects, radiology, and pathology. The references are up to 2008. The table of contents is well organized, and a comprehensive alphabetical index is also provided.

I am old enough to remember the days when *Spencer's Pathology of the Lung* was the only pulmonary pathology book. In 2009 the reader interested in these topics can choose from a large number of books, comprehensive texts, and atlases on these topics; nevertheless, this volume provides information and details that are unique.

Some of my junior colleagues and trainees prefer to learn from a CD, DVD, and online information that accompanies many textbooks nowadays; this book is not accompanied by a CD or online material, but it provides an excellent source of information.

The editors state in the preface that they present the "histopathological or clinical findings as they actually occur in clinical practice." I think they achieved their goal and provide the specialist with practical information on natural history and diagnosis of lung diseases.

In summary, this volume is a valuable reference textbook for clinicians and pathologists, although perhaps of limited value for therapists and technicians, since the predominant objective of the book is to provide clues for histopathologic diagnosis of lung diseases.

Roberto J Barrios MD
Department of Pathology
The Methodist Hospital
Houston, Texas

The author has disclosed no conflicts of interest.

Interpretation of Pulmonary Function Tests: A Practical Guide, 3rd edition. Robert E Hyatt MD, Paul D Scanlon MD, and Masao Nakamura MD. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins. 2008. Soft cover, illustrated, 272 pages, \$69.95.

Textbooks such as West's *Respiratory Physiology*, from which many clinicians in training learn, describe the mechanisms by which air is inhaled and exhaled and gas is transferred in the lungs and peripheral tissues. This approach emphasizes the complexities of the respiratory system rather than the simplicity of the task it accomplishes. Pulmonary function tests (PFTs) are mentioned, but only as demonstrations of the underlying respiratory physiology. Other board-review-type texts present pulmonary physiology and pathophysiology information in mostly table form, without an explanation of why (for example, *why do* obstructive lung diseases have an abnormally low FEV₁/FVC ratio?). Hyatt, Scanlon, and Nakamura's text, **Interpretation of Pulmonary Function Tests: A Practical Guide**, attempts to place itself between the pure physiologic platform of West's text and the less mechanistic board-review-type books.

The authors propose that the under-utilization of pulmonary function testing in mod-

ern clinical practice is attributable to the unfamiliarity and inability to interpret PFTs with which the average clinician struggles. They make the central aim of their text to make PFTs more user-friendly. This aim is well accomplished in this 3rd edition, as the authors review each of the commonly available PFTs and then offer a plethora of practical examples of their interpretation in various disease states. Along the way there is plenty of discussion of the respiratory physiology underlying these tests, but the focus is on PFT interpretation first and physiologic underpinnings second.

The design and layout clearly meet the purpose of simplifying PFT interpretation. The graphics are large, frequent, simple, and well annotated in the legends. The text employs efficient wording, never over-explaining something that a table or figure could communicate more clearly. The text is peppered with clinical "pearls" that allow the reader to think about the PFT information in the context of a patient. These pearls appear most often in earlier chapters, and their absence is missed in chapters describing more complicated PFTs.

Chapters 2–9 present individual tests that might be done in a PFT lab, beginning with the commonly performed (spirometry, lung volumes, diffusion measurements), progressing to the uncommon (measurement of resistance and compliance, and distribution of ventilation). There is deservedly more attention paid to spirometry, lung volumes, and measurement of diffusion capacity. In the spirometry chapter (Chapter 2), care is taken to display graphs showing both volume/time next to the identical flow/volume plot for the same conditions, which is a great aid to the reader in understanding the relationship between these 2 ways of showing the same maneuver. Also included in this chapter is a succinct, but accurate and well illustrated, description of airway-obstructing lesions and the resulting flow-volume loop changes seen with those lesions. Chapter 4, discussing diffusion capacity, makes the useful distinction between conditions that decrease surface area for gas exchange and conditions that increase wall thickness.

The coverage of arterial blood gas analysis, specifically the Davenport diagram and the Henderson-Hasselbalch equation, is superficial and incomplete for a clinician in training. Though the authors admit that this discussion is beyond the scope of the book, they do not provide the underlying context

for why arterial blood gas analysis may be a useful adjunct to PFTs. Three examples at the end of the chapter begin to introduce such a context, but more would be helpful.

Chapters on measurement of resistance and compliance, distribution of ventilation, and measurement of respiratory pressures are brief descriptions of these less commonly performed tests. Though these chapters offer a concise explanation, they would be benefited by overlapping information incorporating the earlier, more common PFTs. It would be helpful to be able to compare resistance measurements with spirometry in a patient with asthma, or maximal inspiratory pressure measurements with upright and supine vital capacity in a patient with diaphragmatic paralysis. This is done to a lesser extent in the examples later in the book, but more overlap earlier on would be beneficial to demonstrate the pathophysiologic derangements measured by these less commonly performed tests.

The middle chapters of the book are a potpourri of "what test to order when" for both general patients and preoperatively, a description of basic exercise tests, an introduction to correlating PFT patterns with disease states, and, finally, an ambitious algorithm of PFT analysis. Although there is no consensus in the literature, the "what to order when" sections would be benefited greatly by more references, especially focusing on professional-organization policy statements. The pattern recognition in the various diseases chapter (Chapter 12) contains a bewildering table (12-1) with arrows describing the expected results in 20 tests for 9 different common pathologic conditions. The chapter's text, which I found more helpful, describes how the fundamental pathologic process of each individual condition translates into pulmonary function testing. These succinct descriptive paragraphs are among the most "high-yield" in the entire book. The algorithm for PFT interpretation (Chapter 14) could probably be skipped by most readers who have any previous experience evaluating patients with lung disease.

The strength of the book is the numerous excellent examples presented in Chapter 15. These are presented in case format, with questions and answers, but are also indexed by disease state at the end of the chapter. Cardiologists have always recognized that the best way to learn electrocardiogram interpretation is to look at a lot of electrocar-

diograms. The authors of this text have used that strategy to great success teaching PFT interpretation. Each case presents discrete features that illustrate how a given pathologic condition affects PFTs, and how that might present in a patient. The authors could have gone into greater detail in their explanations of any abnormal PFT findings, or even included references corroborating their largely accurate interpretations, but the trade-off for brevity and simplicity is a fair one. Once again, it would be helpful if arterial blood gases, single-breath nitrogen testing, respiratory pressure measurement, or exercise testing were included more in this section, as respiratory-system resistance/compliance has been in this latest edition.

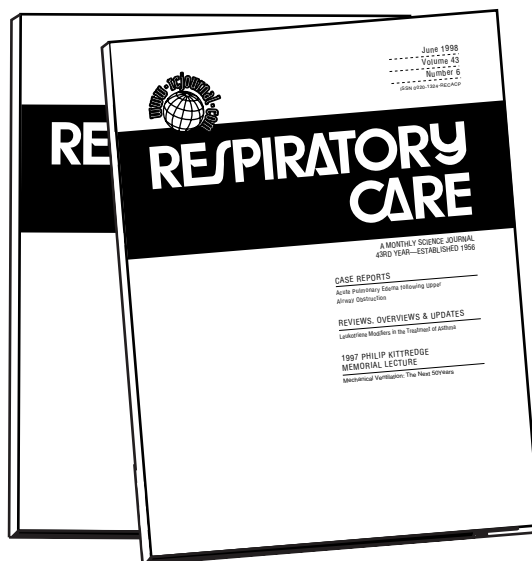
I have few global criticisms. The text is clearly written with a bias toward adult testing and adult disease. This is evident particularly in the sections covering changes in lung function over time, and in the superficial description of forced oscillation technique for estimating pulmonary resistance. It also should be noted that the 3rd edition has very little in the way of changes from the 2nd, published 6 years ago. Included in this edition are the measurement of exhaled nitric oxide, forced oscillation, and some inclusion of American Thoracic Society/European Respiratory Society consensus statements concerning the standardization of pulmonary function testing. Though there is some minor editing of the language, the general outline, the text, and the figures are almost an exact replication of the earlier edition. Owners of the 2nd edition should feel no need to update to the 3rd.

The target audience of this book is certainly physicians and allied health professionals in training who will be doing primary care or pulmonary specialty disease. The book will also be useful for PFT laboratory technicians, as an introduction to the disease states tested for with our armamentarium of tests available. It is not intended to be a stand-alone text on pulmonary physiology or lung disease, but the astute use of numerous illustrative examples makes this a useful adjunct that will bring PFT analysis out of physiologic abstracts by defining the relevance to patient care.

Patrick Ryan Sosnay MD

Division of Pulmonary and Critical Care
Johns Hopkins University
Baltimore, Maryland

The author has disclosed no conflicts of interest.



CRCE through the Journal—2009

Answer Key

For your information, the correct answers to the 50 question for *CRCE through the Journal*, which appeared in the August 2009 issue of *RESPIRATORY CARE*, are given below. Deadline for submission of answer sheets for CRCE credit was October 1, 2009.

- | | | |
|-----------|-----------|-----------|
| 1. True | 18. True | 35. False |
| 2. False | 19. False | 36. False |
| 3. False | 20. True | 37. False |
| 4. False | 21. False | 38. False |
| 5. True | 22. True | 39. False |
| 6. True | 23. False | 40. True |
| 7. False | 24. True | 41. True |
| 8. True | 25. True | 42. False |
| 9. True | 26. True | 43. False |
| 10. True | 27. False | 44. False |
| 11. True | 28. False | 45. True |
| 12. False | 29. False | 46. False |
| 13. False | 30. True | 47. True |
| 14. True | 31. True | 48. False |
| 15. True | 32. False | 49. True |
| 16. False | 33. False | 50. False |
| 17. True | 34. True | |